

A female *Lithobius forficatus* (Chilopoda, Lithobiomorpha) with unusually damaged gonopod spurs

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In *Lithobius* the female gonopods each comprise three articles of which the basal ones bear two (or more) spurs whilst the apical article of the telopodite ends in a claw (Fig. 1). Recognition of these features when the underside of a specimen is examined immediately allows a female animal to be recognised as nothing similar is seen in males. Immature females may show these features in a partially developed state with, for instance, sometimes only one spur visible on each side (see, e.g. Eason, 1964, figs. 278, 298, 299, 321). The number and shape of the spurs and the appearance of the gonopod claws may be helpful in identification but in centipedes, unlike in millipedes, woodlice and insects, gonopods are of somewhat limited value in determining species.

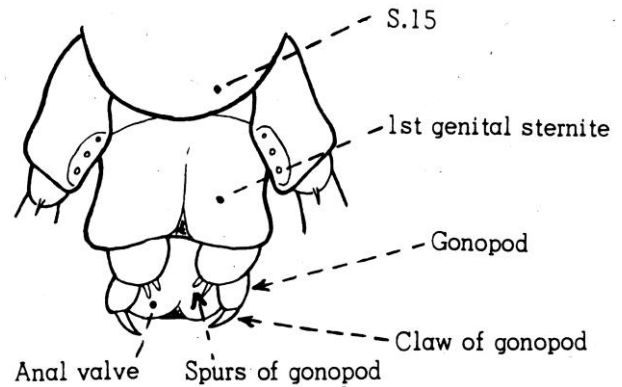


Figure 1: *Lithobius* ♀ gonopods (ventral)
(From Eason, 1964)

Eason (1964) describes the process of egg laying in *Lithobius*. Females lay a number of eggs, one by one at intervals of a few days, each of which, after leaving the vulva is covered in minute particles of soil forming a cement-like shell. This is, seemingly, based on a mucoid secretion, probably from the vulva, the egg being retained by the gonopod spurs whilst the claws are used to pulverise the soil, particles of which adhere to the mucus. The egg is left by the female in the surrounding soil or humus which it resembles. Lawrence (1987) shows a drawing of a female *Lithobius forficatus* holding a large egg by the “claw-like appendages”, as he terms them (Fig. 2).

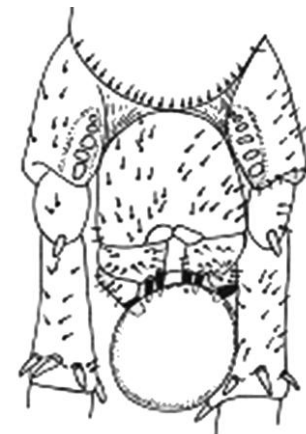


Figure 2: *Lithobius forficatus* ♀ holding egg
(From Lawrence, 1987)

In *Lithobius forficatus* (Linn.,1758), the female gonopods are described as bearing two conical gonopod spurs with occasionally a third on one side only (Figs. 3a, 3b). The claw has both dorsal and ventral denticles (giving it something of a trifid appearance) (Barber, 2009) (Fig. 3c).

Amongst a batch of specimens of centipedes collected by pitfall-trapping from London parks by Edward Milner in 2022 was an example of this species from Tower Hamlets Cemetery (01.iv.2022) in which the gonopod spurs were apparently broken to near the base on both sides. The specimen, presumably mature, was 27mm long (excluding appendages) and bore 6 + 6 teeth on the forcipular coxosternites (Fig. 4a). The appearance of the spurs was very distinctly short and tooth-like and there was darker pigmentation towards the distal ends (Figs. 4b, 4c). In addition denticles on the claws did not seem to be visible and the claw had a rather broad, blunt apex (Fig. 4d). A second female specimen showing similar damage was also collected from the same locality a year later (01.iv.2023).

Although various patterns of damage have been seen in *Lithobius*, where the animal survives and some sort of scar tissue is seen (e.g. Barber, 2011) but this is the first time I have seen this particular pattern. The pigmentation of the vestiges of the spurs might suggest that what is seen is due to healing and scar

tissue formation at the break points. It would be interesting to speculate on the cause of damage to all four spurs apparently simultaneously – possibly attempted predation e.g. by a larger carabid beetle perhaps. Alternatively, could it be, perhaps, be some sort of “wear and tear” effect on an elderly animal? It would also be interesting to know how far the condition of the spurs and claws might have affected the carriage and preparation of eggs.

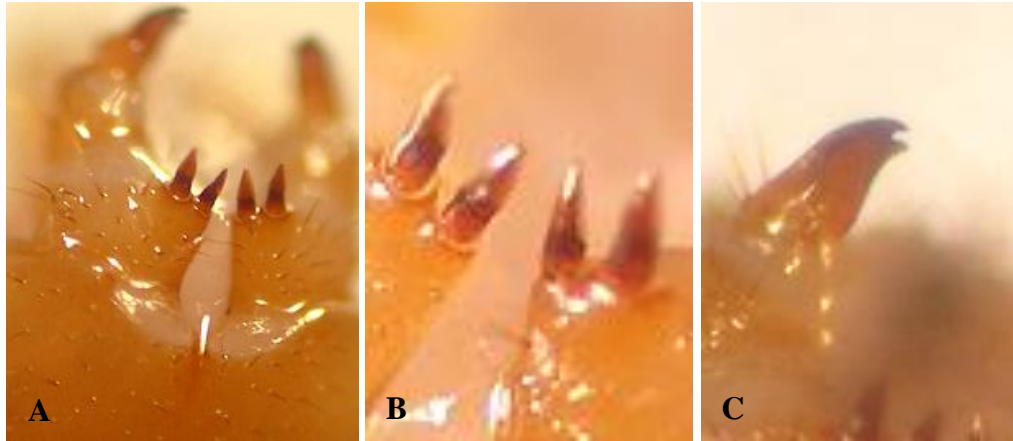


Figure 3: *Lithobius forficatus* undamaged female, Tower Hamlets Cemetery, London (01.x.2020)
A) Gonopods; B) Gonopod spurs, ventral; C) Left gonopod claw.

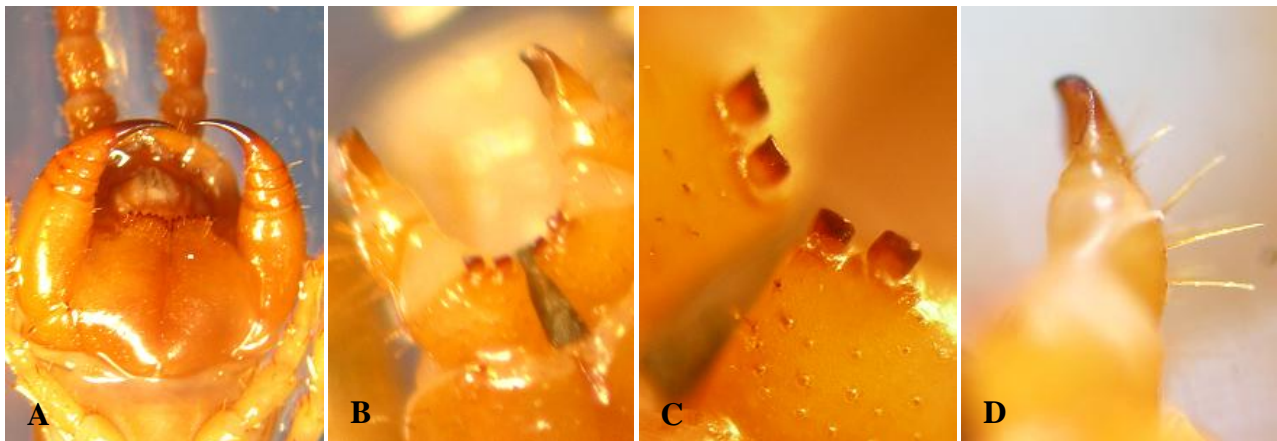


Figure 4: *Lithobius forficatus* damaged female, Tower Hamlets Cemetery, London (01.iv.2022)
A) Head, ventral; B) Gonopods; C) Gonopod spurs, ventral; D) Left gonopod claw.

References

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- Barber, A.D. (2011) *Lithobius forficatus* (Linn., 1758) with apparently massive scar tissue on damaged forcipules. *Bull.Br.Myriapod Isopod Gp.* **25**: 53.
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- Lawrence, R.E. (1987) *The Centipedes and Millipedes of Southern Africa, A Guide*. Cape Town & Rotterdam, A.A.Balkema.